

WHAT IS CLAIMED IS:

1. A cantilever, comprising:
a probe part scanning an observed sample and an electrode part supporting said
5 probe part, wherein
said probe part includes:
an insulator having a sharp-pointed solid shape and
a conductive wiring which is placed on a part of a side surface of said insulator,
having one end reaching a peak of said solid shape and an opposite end reaching said
10 electrode part.
2. The cantilever according to claim 1, wherein
said conductive wiring is placed so as to be shortest in length.
- 15 3. A manufacturing method of a cantilever, comprising the steps of:
(a) forming a hole having a sharp-pointed solid shape in a surface of a substrate
so that a peak is formed inside of said substrate;
(b) forming a sacrifice film to cover said surface of said substrate and a side
surface of said hole having said solid shape;
20 (c) forming a conductive wiring in a side surface part of said hole having said
solid shape on said sacrifice film so that one end reaches a peak of said hole having said
solid shape;
(d) forming an insulator having a selective etching rate to said sacrifice film to
fill up said hole having said solid shape after said step (c);
25 (e) forming an electrode part to cover an upper surface of said insulator, an

opposite end of said conductive wiring and said sacrifice film; and

(f) separating said insulator, said conductive wiring and said electrode part from said substrate by etching said sacrifice film after said step (e).

- 5 4. The manufacturing method of the cantilever according to claim 3, wherein said step (c) includes the step of:
- forming said conductive wiring so that the length from said sharp point of said hole having said solid shape to said surface of said substrate becomes shortest .